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Procedia Economics and Finance 12 (2014) 20 – 26

Procedia Economics and Finance

www.elsevier.com/locate/procedia

Enterprise and the Competitive Environment 2014 conference, ECE 2014, 6–7 March 2014, Brno, Czech Republic

Evaluation of impact of government program for final car market on car dealers

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Abstract

This paper is based on a mixed methods (MM) research design in order to evaluate impacts of the German Accelerated Vehicle Retirement program (German 2009 AVR) on the German car dealership industry. Database for the study is a purposive stratified sample of the annual statutory financial statements of 69 German car dealerships. Both the quantitative (numerical) financial data (QUAN) and the qualitative (textual) representations (QUAL) provided by those financial statements are analysed in a concurrent, convergent research design. Market data and a control group are used for defining the counterfactual situation. The results of the research are discussed verbally.

Selection and/or peer-review under responsibility of the Organizing Committee of ECE 2014

Keywords: Accelerated vehicle retierement program (AVR); mixed methods (MM); car dealerships

1. Introduction

German government started a tax financed AVR being effective during 2009 as a first time adopter. With 2 million cars scrapped and replaced the German 2009 AVR was the "largest program implemented in Europe during the 2009/2010 automotive crisis […]" (Böckers et al. 2012, S. 7). The number of new registrations increased by 23.2 % from 3.1 million in 2008 to 3.8 million in 2009.

Table 1 gives the key characteristics of the German 2009 AVR.

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Selection and/or peer-review under responsibility of the Organizing Committee of ECE 2014
doi:10.1016/S2212-5671(14)00316-5

Table 1. Main points of German 2009 AVR

issue	Features
Timing	January 27, 2009 (start of application) until September 2, 2009 (budget exhausted)
Budget	5 billion Euros
Incentive	2,500 Euros per car
Old car precondition	Minimum age of nine years
New car precondition	New car or vehicle registered with another person or company for not more than 14 months (Jahreswagen)
Aim	Reducing the age of the car fleet
	Economic stimulus
Other	Private consumers only
	Short notice of policy

Source: Böckers et al., 2012, shortened by Author

German 2009 AVR has been implemented speedy enough to avoid Ashenfelters' dip problem (Böckers et al. 2012, S. 8, 9): Deferred purchases, indicated by a decline in sales of 67,000 in the cheapest segments in the 4th quarter 2008 (Proff et al. 2009, S. 10) are marginal compared to the realized total volume of the program (see table 1); the suppliers' (OEM) side has succeeded not before end of March 2009 and the third amendment to the program to get the pre-owning period in the "Jahreswagen" definition adjusted in their favour to 14 months (Bundesamt für Wirtschaft und Ausfuhrkontrolle 2010, S. 5): "Jahreswagen" are passenger cars sold to OEM's employees at special discounts in exchange for buyers obligation to maintain ownership for 12 months or longer.

Table 2 depicts the changes in new registrations form 2008 to 2009 and the purchases subsidized under German 2009 AVR, both related to cars distributed by four selected OEM.

Table 2. Statistics for Δ new registration and AVR subsidies

		OEM			
		VW	GM	Ford	BMW
Δ new registrations	Δ / 2008	0.249	0.298	0.249	−0.094
Δ new registrations	units	262,169	86,093	75,150	−26,726
new registrations	market share	0.346	0.098	0.099	0.068
Subsidized sales	units	705,172	236,960	172,176	34,496
	budget share	0.365	0.123	0.089	0.019

Source: Own table, derived from statistics of Kraftfahrtbundesamt and Bundesamt für Wirtschaft und Ausfuhrkontrolle

In the EU distribution of new cars is organized within the regulatory framework of the motor vehicle block exemption regulation (MVBER) since 1985, the version MVBER 1400/2002 effective in the observation period 2007 to 2009. MBVER's rationale is to create a closed distribution system by vertical restriction. This system is characterized by a shift of powers to OEMs, which among others results in a large degree of homogeneity of dealer contracts, both within brands and across brands. (Arrunada et al., S. 151,165,166,167,169) In practice an important aspect of OEM-to-dealer relation is the abusive increase of qualitative standards set forth by OEMs in order to stifle multi-branding (Siedenhans 2004, S. 101) against dealers' rights expressively stated other under applicable MVBER

rules. (Buzzavo 2008, S. 108,114) Accordingly the single-brand respectively the "single-OEM" – dealer is predominant by numbers of firms in the sample this paper is based upon.

The increase in sales of new passenger cars based on an AVR does not necessarily lead to profits in the car dealership industry. Losses could result from impairments of the group of "gebrauchte Neuwagen" (young pre-owned cars, translation by author) due to the arbitrage principle. (Läufer 2009, S. 414,415) Auto dealers accept broad limitation of their decision rights against compensation by monetary incentives based on multidimensional effort vectors composed of the degree of achievement of sales targets, customer satisfaction, and other. "The importance of these discounts is such that most dealers would be unable to obtain any profits if they were not receiving them." (Arrunada et al., S. 151,165,166,167,169) Thus profitability and financial position of the car dealer are partially subject to influences not driven by the car and service and repair market.

2. Objective

The objective of this paper is to evaluate impacts of the German 2009 AVR on the financial position of the car dealership industry. Financial position will be measured by the commonly known return-on-investment (ROI) ratio and its main components turnover, gross profit (gross), EBIT and balance sheet total (total). EBT as an important figure shareholders will be taken into account also.

3. Materials and methods

This paper follows a MM methodology with the purpose of finding more precise and detailed and in this sense better answers to the research question (Wilkins und Woodgate 2008, S. 24) than in a study which would use quantitative data only. A simultaneous, not sequential, timing of the data analysis without a priori weighting of the two data sets is applied. (Guest 2013, S. 147) The MM approach of this paper encompasses the pairings of QUAN – QUAL data to be analyzed and QUAN – QUAL answers to be found. (Tashakkori und Creswell 2007, S. 4) This research is based on a purposive sample in order to ensure the availability of the data needed (reporting on turnover) and to achieve representativeness (car dealership industry) and comparability over the observation period. (Teddlie und Yu 2007, S. 83–85) Non-application of probability sampling methods results from the number of sample elements found, not for methodological reasons. The visual presentation of the research process refers to the recommendation and the format of fig. 1 follows the works of (Guest 2013, S. 144) and (Wilkins und Woodgate 2008, S. 30).

A listing of all German car dealers, or all dealers complying with the above given definition does not exist. German accounting and reporting regulation limits full disclosure of financial data including turnover and gross profits to "big" companies. Two sources provide guidance for sample selection of big entities, the TOP 100 list (Diez und Grimberg 2011) and a non-scientific, commercial source (www.wer-zu-wem.de). The search for the legal entities of the dealers listed in those sources lead to 215. Subtraction of 132 firms for technical reasons (most of them not meeting or avoiding to meet the German GAAP definition of a big company) lefts 83 firms. GM, VW and Ford accumulate to an absorbtion of 79 % of the German 2009 AVR's budget. Stratification on these brands leads to exclusion of 6 firms and a sample size of 77.

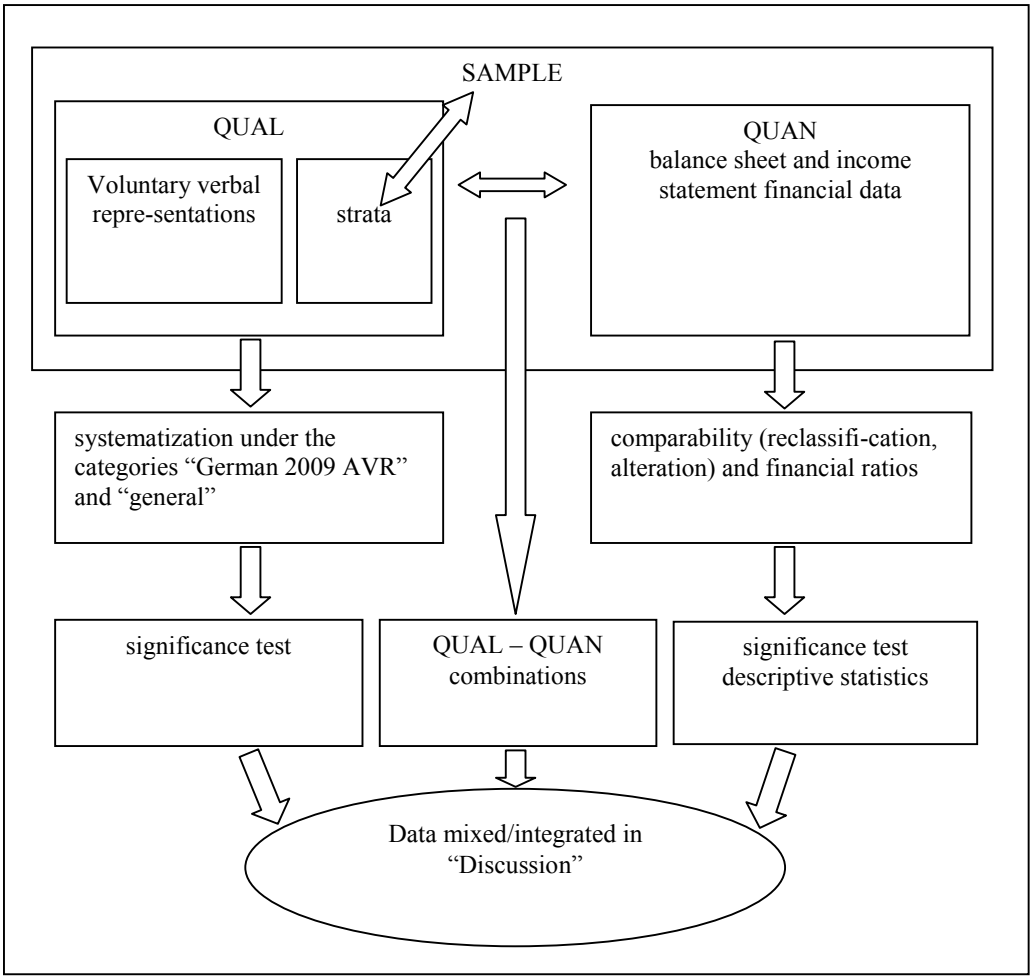

Fig. 1. design of this study

4. Results

Management of the firms in the sample report stabile or positive after-sales businesses in 2009 compared to 2008 only (table 4). Constructed counterfactual situation for new registrations without AVR comes to a quite linear line for the car classes subsidized under the German 2009 AVR with the years prior and subsequent to 2009. (Böckers et al. 2012, S. 14, Figure 3) Taken 2008 as the counterfactual situation, financial statements for 2008 and 2009 are paired samples. The descriptive statistics for the changes from 2008 to 2009 relative to 2008 (Δ) in the order: mean | median | sd and the results of the Wilcoxon signed rank test (one-sided) expressed as α-levels in steps *0.0005, ..., 0.0500* for financial indicators are displayed in table 3.

Table 3 presents improvements of ROI, supported by its two main components “total” and EBIT. The improvements of these indicators are significant for VW and GM dealers, not for Ford and BMW dealers. This pairing is unexpected due to AVR absorbtion rates (table 2). Distributions of the significantly increased Δs, except those for “total” are positively skewed. Improvements of EBT exceed those of EBIT by far (median). The latter statement applies to the Ford and BMW dealers, too. Improvements of financial indicators of BMW dealers exceed those of Ford dealers clearly; BMW – EBIT contains one or more extreme values.

Table 3. Descriptive statistics and Wilcoxon significance test

Indicator	OEM			
Δ	VW	GM	Ford	BMW
	n=42	n=11	n=9	n=15
ROI	2.13 | 0.24 | 5.87	1.48 | 0.89 | 2.49	0.56 | 0.13 | 0.92	0.76 | 0.27 | 2.08
	0.0050	*0.0100*	*not significant*	*not significant*
total	−0,05|−0.06|0.08	−0.07| −1.0 | 0.09	−0.10|−0.11| 0.06	−0.06|−0.04| 0.10
	0.0005	*0.0250*	*0.0050*	*not significant*
EBIT	1.86 | 0.23 | 4.55	1.28 | 0.79 | 2.23	0.45 | −0.01| 0.90	0.59 | 0.11 | 1.74
	0.0059	*0.0250*	*not significant*	*not significant*
EBT	11.6 | 0.87 | 69.0	4.64 | 3.46 | 7.22	0.10 | 0.48 | 2.55	−0.77 | 0.75 |19.9
	0.0050	*0.0025*	*not significant*	*0.0500*
gross	0.07 | 0.06 | 0.14	0.06 | 0.04 | 0.07	0.00| −0.02 | 0.08	0.00 | 0.02 | 0.09
	0.0005	*0.0250*	*not significant*	*not significant*
turnover	0.15 | 0.12 | 0.15	0.12 | 0.09 | 0.13	0.03 | 0.00 | 0.13	−0.05|−0.06| 0.11
	0.0005	*0.0250*	*not significant*	*not significant*

Source: Own table

Only 56 out of the 77 firms in sample present explanations supplemental to financial information depicted in table 4 after systematization by author; (+), (−) indicate increase, decrease, "AVR" or "crisis" are named by management as related reasons. Numbers of statements made are presented together with the *factors for the specific like sign portion*.

Table 4. Statistics of verbal representations

business	financial issue	statement	OEM			
			VW	GM	Ford	BMW
			n=34	n=6	n=7	n=9
new cars	turnover	(+)	*0.88* | 25	*1.0* | 6	*0.86* | 7	*0.67* | 3
	thereof	AVR	*0.64*	*0.67*	*1.00*	*0.50*
	gross profit	(+)	*0.30* | 10	1		
	thereof	AVR (±)	*0.60* | 10	1		
used cars	turnover	(−)	*0.92* | 12	*0.67* | 3	*0.60* | 5	*0.25* | 4
	thereof	AVR	*0.73*	*0.50*	*0.67*	
	gross profit	(−)	*0.92* | 12	*1.0* | 2		*0.75* | 4
	thereof	crisis	*0.46*			*0.33*
used cars on stock	impairment			1		1
	thereof	AVR	16	1	1	1
after sales	turnover	(+)	*1.0* | 3	*1.0* | 2		*1.0* | 3
	gross	(+)		*1.0* | 2		*1.0* | 1
	general	(+)	*1.0* | 1		*1.0* | 1	*1.0* | 1

Source: Own table

In table 4 the VW, GM and Ford dealers appear as a homogeneous group with respect to increased turnovers of new cars, adversed by decreased turnovers of used cars. The VW dealers' statements on gross profit from new cars do not clearly refer to the ratio or the absolute number. 21 of the 56 dealers adding explanatory language to their financial statements report impairments of the used cars on stock, with 19 of them identifying the AVR bounty as cause therefore. In none of the management reports conclusive, or comprehensive summaries of the described changes on the financial position, results of operations or future position of the firm are made. The arbitrage principle and its negative impacts on profitability is strongly supported by QUAL statistics.

5. Discussion

QUAN statistics indicate positive influence of German 2009 AVR on financial position of car dealership industry but do not support the hypothesis that German 2009 AVR is the predominant reason for improvement found in the dealership industry, such taken as a composition of OEM bound strata. QUAL statistics support a clear and strong influence of the AVR on car dealers' new and used cars businesses, but does not provide summarized and conclusive statements on the overall effects on the car dealerships and its financial position. Combined analysis of QUAN and QUAL may lead to adjustments of the QUAN sample, or, better a comprehensive interpretation.

6. Summary

Two million car purchases subsidized under the German 2009 AVR and an increase of 23 % of new registrations in 2009 compared to 2008 are not equally allocated to all car brands. AVR subsidies pushed new car business in terms of turnover and gross profit but also caused decreases in volume and profits of used car business as well as impairments of used cars on stock. The overall financial position (ROI) accordingly is positively influenced, a fact which applies to BMW dealers also, which were included in the research as the reference group not benefiting from AVR subsidies. Together with EBIT, EBT improvement is observed in all strata of the sample. Thus decrease in interest expense was highly influential on the results of operations of German car dealership industry. This aspect deserves further research due to interdependence of interest level and economic crisis scenario.

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